Cervical length and different biochemical markers in spontaneous preterm birth in symptomatic patients

Hadzi Lega M, Popovska A, Daneva Markova A, Girevski V
University Clinic of gynecology and obstetrics, Skopje, FYROM

Objective

The aim of this study was to determine the relationship between sonographic cervical length, fetal fibronectin (fFN), phIGFBP-1 (Actim partus test), cytokines (IL-6, IL-2R and TNF-alpha) and spontaneous preterm birth(SPTB) up to 14 days from sampling.

Methods

Patients were recruited from the period of 6 months from September 2013 until March 2014 with symptoms or complaints suggestive of preterm labor. Consenting women were treated according to usual hospital protocol, with addition of vaginal swabs taken for fetal fibronectin, phIGFBP-1 (Actim partus test) and cervicovaginal IL6, IL2R and TNF-alpha. The outcome variable was occurrence of preterm delivery within 14 days from the day of hospital admission.

Results

Thirty six patients (62. 07%) were delivered within 14 days from admission. The fetal fibronectin test is a significant predictor of preterm delivery. Patients with a positive fetal fibronectin test have an OR of 6. 429 (95%CI 1. 991-20. 758) to deliver prematurely. The patients that gave birth within 14 days of admission were also statistically more likely to have a positive phIGFBP-1 test (p=0. 02). All but one pregnant women that remained pregnant after 14 days of admission had a serum level of IL-2R below 500 U/mL and the difference in concentrations between the two groups is statistically significant (p=0. 044). The patients that were delivered within 14 days of admission in our study group had an average cervical length of 18. 78±5. 8mm, which is significantly lower than the average cervical length (23. 87±6. 36) of patients that remained pregnant after 14 days (p=0. 0028). Our results indicated that the cervical length significantly correlates with the concentration of IL-6 in the CVF (Spearman's coefficient R = -0. 382, p<0. 05), i. e. there is a negative indirect correlation between the two parameters, which means that increased IL-6 concentrations in the CVF mean shortening of the cervix and vice-versa. Cervical length also correlated with a positive phIGFBP-1 test i. e. patients with a positive test had an average cervical length of 18. 5±4. 63mm, which is significantly lower than patients with a negative test – 23. 43±7. 39mm (p=0. 003).

Conclusion

The studied biochemical markers ion our study was only moderately successful in the prediction of preterm delivery. Further research is required in terms of the evaluation of cost-benefit of using such test to prevent subsequent unnecessary interventions in the low-risk group, as well as achieve the benefits from such intervention in the high-risk groups of patients.